

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 19 JUL 2005

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Applicant's or agent's file reference 12081PCT dl:lt:df	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/AU2004/001044	International filing date (day/month/year) 6 August 2004	Priority date (day/month/year) 11 August 2003	
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ A01K 97/00			
Applicant PUGLISI, Joseph et al			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 6 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input type="checkbox"/> Box No. VIII	Certain observations on the international application

Date of submission of the demand 31 January 2005	Date of completion of the report 12 July 2005
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer COLIN FITZGIBBON Telephone No. (02) 6283 2226

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/001044

Box No. I Basis of the report

- With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1 (b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 4 to 8 as originally filed/furnished
 - pages* 1 to 3 received by this Authority on 10 June 2005 with the letter of 10 June 2005
 - pages* received by this Authority on with the letter of
- ☒ the claims:
- pages as originally filed/furnished
 - pages* as amended (together with any statement) under Article 19
 - pages* 9 to 11 received by this Authority on 10 June 2005 with the letter of 10 June 2005
 - pages* received by this Authority on with the letter of
- ☒ the drawings:
- pages 1/4 to 4/4 as originally filed/furnished
 - pages* received by this Authority on with the letter of
 - pages* received by this Authority on with the letter of
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to the sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to the sequence listing (*specify*):

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/001044

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1 to 17	YES
	Claims	NO
Inventive step (IS)	Claims 1 to 17	YES
	Claims	NO
Industrial applicability (IA)	Claims 1 to 17	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

The following documents identified in the International Search Report have been considered for the purposes of this report:

D1 JP 2000-41554 A (Takamiya)
D2 JP 11-56187 A (Matsushita Electric Works Ltd)
D3 GB 1421928 A (VOGELBUSCH GmbH)

All the documents cited in the ISR were category A only. Therefore the claimed invention is not disclosed in any of these patent documents and hence all the claims are novel and involve an inventive step.

The closest art of D1 discloses a tidal current detector which indicates the current at a depth in a body of water, but it is unclear whether the housing is able to float, nor can the weight (7) be considered a "water capturing means" as defined in the present application.

A Berley Trail Indication Apparatus

The present invention relates to a berley trail indication apparatus and, in particular, to a submerged water capturing means in connection with a floating device that is visible to a fisherman for indicating to the fisherman the direction of current at the general depth of the water capturing means.

BACKGROUND OF THE INVENTION

Creating and maintaining a berley or chum trail is of utmost importance in any form of bait-fishing. The aim of a berley trail is to draw fish from surrounding areas as close as possible to the area in which a fisherman is casting his or her bait. There are generally two types of berley trail, a surface trail which is aimed at luring surface feeding fish and bottom trails aimed at luring bottom feeding fish. The present invention may be used in either situation.

Surface trails are typically achieved by either manually dispensing berley over the side of the boat, or with the use of a berley pot which hangs over the boat slightly submerged which slowly dispenses the berley contained therein through small holes around its side. Bottom trails are usually achieved by using a weighted berley dispensing device that sits 1-2 metres above the sea floor. Although berley trails are known to be effective tools in attracting fish, a known problem exists in that underwater current often pulls the trail in a direction unknown to the fisherman, this being a result of current travelling in different directions at different depths of water beneath. Therefore, the area that is being fished is often not the same area as the area through which the berley trail is moving.

Although there are known methods for measuring the direction of water current, insofar as the applicant is aware there exists no berley trail indication device or apparatus that is easy to use, and which is capable of not only indicating the direction in which a berley trail is moving at the surface, but at any pre-determined depth of water.

It is therefore an object of the present invention to overcome at least some of the aforementioned problems or to provide the public with a useful alternative.

SUMMARY OF THE INVENTION

Therefore in one form of the invention there is proposed an apparatus for indicating a direction of flow in a body of liquid, said apparatus characterised by:
a floating means adapted to float on said body of liquid; and
a liquid capturing means in connection with said floating means, said liquid capturing means

configured to be submerged in the body of liquid beneath the floating means to thereby move the floating means in the direction of flow of liquid that is captured therein.

5 Preferably the length of said connection between the floating means and the liquid capturing means is adjustable to allow for the capture of liquid at different approximate depths. The depth is approximate and will not always correspond with the length of the connection because the capturing means will not always extend exactly vertically downwards, for example, when the flow of liquid is significant.

10 In preference said liquid capturing means is of a weight heavy enough to remain submerged beneath the surface of water, but light enough such that said floating means connected thereto remains substantially above the surface of water.

In preference said liquid capturing means is configured such that when a flow of liquid sweeps past it, it moves into a position where a face of the liquid capturing means becomes generally perpendicular to the flow of water thereby thrusting said water capturing means in the direction of flow.

15 Preferably said connection between the liquid capturing means and floating means is a tethered connection.

Advantageously said tethered connection is a rope.

20 In preference said face of the liquid capturing means is positioned at its base, said liquid capturing means further including a longitudinal portion extending perpendicularly outwardly from said face and guiding said flowing liquid thereagainst.

25 Preferably the face of said liquid capturing means is a substantially square base plate and said longitudinal portion comprises two substantially rectangular plates joined to one another along their central longitudinal axes thereby forming four perpendicularly disposed fins, each of said rectangular plates being aligned along a diagonal axis of said square base plate.

Alternatively the face of said liquid capturing means is a substantially triangular base plate and said longitudinal portion comprises three fins angularly disposed about a central point of said base plate, each of said fins being directed toward each apex of said triangular base member.

30 A yet further alternative is where the face of the liquid capturing means is the inner surface of a conical member including open ends, and said longitudinal portion comprises two

plates joined along the central longitudinal axis of the conical member and housed perpendicularly relative to one another within said conical member.

Advantageously said liquid capturing means is constructed of waterproof material such as aluminium.

5 Preferably said apparatus is adapted for use from a boat whereby said floating means is secured to said boat in a second tethered connection.

In preference said second tethered connection is in the form of a string such as monofilament fishing line.

10 In preference said floating means is in the form of a fishing float having a generally conical shape.

In a further form of the invention there is proposed an apparatus for indicating to a person a direction of water current at a desired depth of water, said apparatus characterised by:

15 a floating indicator that is visible to said person; and
a weighted sail in connection with said floating indicator through a tether of a length corresponding with said desired depth, said sail configured to be moved by the force of the water current in the direction of the water current to thereby also move the floating indicator in the direction of the water current, despite the direction of water current generally above or below said desired depth.

20 In a still further form of the invention there is proposed a berley trail indication apparatus for indicating to a fisherman a direction in which a berley trail is moving when commenced at a pre-determined depth of water, said berley trail indication apparatus characterised by:

25 a floating indicator that is visible to the fisherman;
a berley source adapted to be submerged in the water to said pre-determined depth;
a weighted sail in connection with said floating indicator through a tether of a length slightly greater than said pre-determined depth, said weighted sail configured to be moved by the force of the water current in the direction of the water current to thereby also move the floating indicator in the same direction, this indicating to the fisherman the general direction
30 in which the berley trail is moving at that depth.

Advantageously the weighted sail is submerged a depth of approximately 2 metres greater than the depth of the berley source.

CLAIMS

1. An apparatus for indicating a direction of flow in a body of liquid, said apparatus characterised by:
a floating means adapted to float on said body of liquid; and
5 a liquid capturing means in connection with said floating means, said liquid capturing means configured to be submerged beneath the floating means so as to move the floating means in the direction of flow of liquid that is captured therein.
2. An apparatus as in claim 1 wherein the length of said connection between the floating means and the liquid capturing means is adjustable to allow for the capture of liquid
10 at different approximate depths.
3. An apparatus as in claims 1 or 2 wherein said liquid capturing means is of a weight heavy enough to remain submerged beneath the surface of the body of liquid, but light enough such that said floating means connected thereto remains substantially above the liquid surface.
- 15 4. An apparatus as in claim 3 wherein said liquid capturing means is configured such that when a flow of liquid sweeps past it, it moves into a position where a face of the liquid capturing means becomes generally perpendicular to the flow of liquid thereby thrusting said capturing means in the direction of flow.
- 20 5. An apparatus as in any one of claims 1-4 wherein said connection between the liquid capturing means and floating means is a tethered connection.
6. An apparatus as in claim 5 wherein said tethered connection is a rope.
7. An apparatus as in any one of claims 1-5 wherein said face of the liquid capturing means is positioned at its base, said liquid capturing means further including a longitudinal portion extending perpendicularly outwardly from said face for guiding
25 said flowing liquid thereagainst.
8. An apparatus as in claim 7 wherein the face of said liquid capturing means is a substantially square base plate and said longitudinal portion comprises two substantially rectangular plates joined to one another along their central longitudinal axes thereby forming four perpendicularly disposed fins, each of said rectangular
30 plates being aligned along a diagonal axis of said square base plate.

9. An apparatus as in claim 7 wherein the face of said liquid capturing means is a substantially triangular base plate and said longitudinal portion comprises three fins angularly disposed about a central point of said base plate, each of said fins being directed toward each apex of said triangular base member.
- 5 10. An apparatus as in claim 7 wherein the face of said liquid capturing means is the inner surface of a conical member including open ends, and said longitudinal portion comprising two plates joined along the central longitudinal axis of the conical member and housed perpendicularly relative to one another within said conical member.
- 10 11. An apparatus as in any one of the above claims wherein said liquid capturing means is constructed of waterproof material such as aluminium.
12. An apparatus as in any one of the above claims wherein said apparatus is adapted for use from a boat whereby said floating means is secured to said boat in a second tethered connection.
- 15 13. An apparatus as in claim 12 wherein said second tethered connection is in the form of a string such as monofilament fishing line.
14. An apparatus as in any one of the above claims wherein said floating means is in the form of a fishing float having a generally conical shape.
- 20 15. An apparatus for indicating to a person a direction of water current at a desired depth of water, said apparatus characterised by:
a floating indicator that is visible to said person; and
a weighted sail in connection with said floating indicator through a tether of a length corresponding with said desired depth, said sail configured to be moved by the force of the water current in the direction of the water current to thereby also move the
25 floating indicator in the direction of the water current, despite the direction of water current generally above or below said desired depth.
- 30 16. A berley trail indication apparatus for indicating to a fisherman a direction in which a berley trail is moving when commenced at a pre-determined depth of water, said berley trail indication apparatus characterised by:
a floating indicator that is visible to the fisherman;
a berley source adapted to be submerged in the water to the pre-determined depth;
a weighted sail in connection with said floating indicator through a tether of a length

slightly greater than said pre-determined depth, said weighted sail configured to be moved by the force of the water current in the direction of the water current to thereby also move the floating indicator in the same direction, this indicating to the fisherman the general direction in which the berley trail is moving at that depth.

- 5 17. A berley trail indication apparatus as in claim 16 wherein the weighted sail is submerged a depth of approximately 2 metres greater than the depth of the berley source.

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